

As people age, do basic executive functions decline or remain constant?

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Abstract

Executive functions are defined as cognitive regulatory mechanisms and processes that are unique to humans. Extensive research has been conducted to comprehend the factors that influence these functions, the most important of which is age, which correlates with varying executive function performance. However, no research has examined and compared the performance of different age groups on the basic executive functions (inhibition, updating, and shifting) among the Iranian population. The present study used computerized tasks to address this gap by examining individuals aged 16 to 59. Ten distinct age groups were assigned to a total of 479 participants (51% females) using the quota sampling method and compared using the one-way analysis of variance. The analysis revealed that for the inhibition component, there was a significant difference between the scores of the ten age groups on the stop signal and antisaccade tasks but no significant difference on the Stroop task. In addition, also there was a significant difference between the scores of updating component but not for the shifting component. The findings suggest that although the performance of individuals in the Shifting component remains constant from youth to adulthood, youth performance growth in the inhibition and updating component of executive functions is on the rise and reaches a peak in participants aged 20 to 24 before declining slightly until the end of adulthood. Limitations and future direction are discussed.

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